

## CLAIMS

What is claimed is:

1. A method for preparing a coating solution comprising:  
subjecting a solution of an alkoxide to hydrolyzation and condensation in a reaction system;  
aging the solution to form a sol-gel reaction product; and  
diluting the reaction product.

2. The method of claim 1, wherein the alkoxide comprises one of the general formula:



wherein M is selected from at least one of the group consisting of Si, Ti, B, Al, and Zr,

wherein R is an alkyl group having 1-8 carbons and x is the valence state of the cation.

3. The method of claim 1, wherein the aging comprises 1 to 24 hours at 50°C.